

January 4, 2013

Mr. Jason Gunter Remedial Project Manager U.S. Environmental Protection Agency Region 7 - Superfund Branch 901 North 5<sup>th</sup> Street Kansas City, KS 66101

Re: The Doe Run Company - Leadwood Mine Tailings Site Monthly Progress Report

Dear Mr. Gunter:

As required by Article VI, Section 50 of the Unilateral Administrative Order (Docket No. CERCLA-07-2006-0272) for the referenced project and on behalf of The Doe Run Company, the progress report for the period October 1, 2012 through October 31, 2012 is enclosed. If you have any questions or comments, please call me at 573-638-5020 or Mark Nations at 573-518-0800.

Sincerely,

Tv L. Morris, P.E., R.G.

Vice President

TLM/jms

Enclosures

c: Mark Nations - TDRC

Matt Wohl - TDRC (electronic only)

Kathy Rangen - MDNR

Tim Skoglund - Barr Engineering

07CR

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#### Leadwood Mine Tailings Site

Leadwood, Missouri

#### Removal Action - Monthly Progress Report

Period: October 1, 2012 – October 31, 2012

#### 1. Actions Performed or Completed This Period:

a. No activities were completed at the site during this period.

#### 2. Data and Results Received This Period:

- a. During this period, water samples were collected from downstream of Leadwood Dam and the East Seep and Erosion Area, as well as from upstream and downstream of the confluence of Eaton Creek with Big River. The analytical results for this event are included with this progress report.
- b. During this period, the Ambient Air Monitoring Report for July 2012 was received. Any issues identified in this report are discussed below. A copy of this document has been sent to your attention.

The July 2012 Ambient Air Monitoring Report noted the following:

- The action levels for lead and dust were not exceeded.
- No samples were taken with the TSP monitors on 07/04/12 due to the holiday.
- There was a QA blank filter for the Leadwood #3 (School) TSP and PM<sub>10</sub> monitors on 07/31/12.

#### 3. Scheduled Activities not Completed This Period:

a. None.

#### 4. Planned Activities for Next Period:

- a. Continue vegetation maintenance activities. The use of biosolids will only be continued if a biosolids management plan has been submitted to and approved by EPA.
- b. It is anticipated that EPA will use this site as a soil repository in the future. Preparations for these activities will continue.
- c. Complete monthly water sampling activities as described in the Removal Action Work Plan.
- d. Complete air monitoring activities as described in the Removal Action Work Plan.

#### 5. Changes in Personnel:

- a. None.
- 6. Issues or Problems Arising This Period:
  - a. None.

#### 7. Resolution of Issues or Problems Arising This Period:

a. None.

**End of Monthly Progress Report** 



November 02, 2012

Allison Olds Barr Engineering Company 1001 Diamond Ridge Suite 1100

Jefferson City, MO 65109 TEL: (573) 638-5007

FAX: (573) 638-5001

**RE:** Leadwood MTS-25/86-0013

Dear Allison Olds:

TEKLAB, INC received 5 samples on 10/17/2012 10:00:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Michael L. Austin

Project Manager

(618)344-1004 ex 16

MAustin@teklabinc.com

WorkOrder: 12100835



### **Report Contents**

http://www.teklabinc.com/

Client: Barr Engineering Company

Work Order: 12100835

Client Project: Leadwood MTS-25/86-0013

Report Date: 02-Nov-12

#### This reporting package includes the following:

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#### **Definitions**

http://www.teklabinc.com/

Client: Barr Engineering Company

Work Order: 12100835

Client Project: Leadwood MTS-25/86-0013

Report Date: 02-Nov-12

#### Abbr Definition

CCV Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.

DF Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.

DNI Did not ignite

- DUP Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
- ICV Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
- IDPH IL Dept. of Public Health
- LCS Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
- LCSD Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
  - MB Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
- MDL Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.
- MS Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
- MSD Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
- MW Molecular weight
- ND Not Detected at the Reporting Limit

#### **NELAP NELAP Accredited**

- PQL Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
- RL The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
- RPD Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
- SPK The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
- Surr Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
- TNTC Too numerous to count ( > 200 CFU )

#### Qualifiers

- # Unknown hydrocarbon
- E Value above quantitation range
- M Manual Integration used to determine area response
- R RPD outside accepted recovery limits
- X Value exceeds Maximum Contaminant Level

- B Analyte detected in associated Method Blank
- H Holding times exceeded
- ND Not Detected at the Reporting Limit
  - S Spike Recovery outside recovery limits



#### **Case Narrative**

http://www.teklabinc.com/

Client: Barr Engineering Company

Work Order: 12100835

Client Project: Leadwood MTS-25/86-0013

Report Date: 02-Nov-12

Cooler Receipt Temp: 1.4 °C

This report was revised on 11/02/2012 per Terri Olson's request. The reason for the revision is add the Method Blank and LCS to the QC report for Zinc. Please replace report dated 10/22/2012 with this report. MLA 11/02/12

#### **Locations and Accreditations**

	Collinsville		Springfield			Kansas City
Address	5445 Horseshoe Lake Road Collinsville, IL 62234-7425	Address	3920 Pintail Dr Springfield, IL 6271	1-9415	Address	8421 Nieman Road Lenexa, KS 66214
Phone	(618) 344-1004	Phone	(217) 698-1004		Phone	(913) 541-1998
Fax	(618) 344-1005	Fax	(217) 698-1005		Fax	(913) 541-1998
Email	jhriley@teklabinc.com	Email	kmcclain@teklabino	.com	Email	dthompson@teklabinc.com
State		Dept	Cert #	NELAP	Exp Date	Lab
Illinois	<u> </u>	EPA	100226	NELAP	1/31/2013	Collinsville
Kansas	s K	<b>CDHE</b>	E-10374	NELAP	1/31/2013	Collinsville
Louisia	ana L	DEQ	166493	NELAP	6/30/2013	Collinsville
Louisia	ana L	DEQ	166578	NELAP	6/30/2013	Springfield
Texas	Т	CEQ	T104704515-12-I	NELAP	7/31/2013	Collinsville
Arkans	sas A	ADEQ	88-0966		3/14/2013	Collinsville
Illinois	ı II	DPH	17584		4/30/2013	Collinsville
Kentuc	cky U	JST	0073		5/26/2013	Collinsville
Missou	uri M	MDNR	00930		4/13/2013	Collinsville
Oklaho	oma O	DDEQ	9978		8/31/2013	Collinsville



http://www.teklabinc.com/

Client: Barr Engineering Company

Work Order: 12100835

Client Project: Leadwood MTS-25/86-0013

Report Date: 02-Nov-12

Lab ID: 12100835-001

Client Sample ID: LW-001

Matrix: WASTE WATER

Collection Date: 10/16/2012 8:45

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 600 375.2 REV 2.0 1993	(TOTAL)							
Sulfate	NELAP	200		766	mg/L	20	10/18/2012 3:26	R169463
STANDARD METHOD 4500-	B, LABORATORY A	NALYZED						
Lab pH	NELAP	1.00		7.99	TV-1000 (1114-00 10 CV )000 P4-04-04 (1114-04	1	10/17/2012 14:16	R169403
STANDARD METHODS 2340	C							
Hardness, as ( CaCO3 )	NELAP	5		920	mg/L	1	10/18/2012 7:50	R169407
STANDARD METHODS 2540	D							
Total Suspended Solids	NELAP	6	THE THE RESERVE THE PARTY OF TH	< 6	mg/L	1	10/18/2012 9:43	R169470
STANDARD METHODS 2540	F							
Solids, Settleable	NELAP	0.1	A COMMON THE PROPERTY OF THE P	< 0.1	ml/L	1	10/17/2012 13:47	R169428
STANDARD METHODS 5310	C, ORGANIC CARBO	N						
Total Organic Carbon (TOC)	NELAP	1.0		4.9	mg/L	1	10/18/2012 15:43	R169504
EPA 600 4.1.1, 200.7R4.4, ME	TALS BY ICP (DISSO	LVED)						
Cadmium	NELAP	2.00		2.60	μg/L	1	10/18/2012 12:52	82578
Zinc	NELAP	10.0		1060	μg/L	1	10/18/2012 12:52	82578
EPA 600 4.1.4, 200.7R4.4, ME	ETALS BY ICP (TOTAL	.)						
Cadmium	NELAP	2.00	THE CHARLES THE STATE OF THE STATE OF	2.90	µg/L	1	10/18/2012 13:54	82577
Zinc	NELAP	10.0		1130	μg/L	1	10/18/2012 13:54	82577
STANDARD METHODS 3030	E, 3113 B, METALS E	BY GFAA						
Lead	NELAP	4.00	X	27.2	µg/L	2	10/18/2012 11:58	82570
STANDARD METHODS 3030	B, 3113 B, METALS B	Y GFAA (D	ISSOLVE	D)				
Lead	NELAP	2.00	X	15.8	μg/L	1	10/18/2012 14:05	82567



http://www.teklabinc.com/

Client: Barr Engineering Company

Work Order: 12100835

Client Project: Leadwood MTS-25/86-0013

Report Date: 02-Nov-12

Lab ID: 12100835-002

Client Sample ID: LW-002

Matrix: WASTE WATER

Collection Date: 10/16/2012 9:55

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 600 375.2 REV 2.0 1993	(TOTAL)							March 1
Sulfate	NELAP	500		519	mg/L	50	10/18/2012 3:28	R169463
STANDARD METHOD 4500-H	B, LABORATORY A	NALYZED						
Lab pH	NELAP	1.00		7.92		1	10/17/2012 14:18	R169403
STANDARD METHODS 2340	C							
Hardness, as (CaCO3)	NELAP	5		620	mg/L	1	10/18/2012 7:50	R169407
STANDARD METHODS 2540	D							
Total Suspended Solids	NELAP	6		< 6	mg/L	1	10/18/2012 9:43	R169470
STANDARD METHODS 2540	F							
Solids, Settleable	NELAP	0.1		< 0.1	ml/L	1	10/17/2012 13:47	R169428
STANDARD METHODS 5310	C, ORGANIC CARBO	N						
Total Organic Carbon (TOC)	NELAP	1.0		1.6	mg/L	1	10/18/2012 15:49	R169504
EPA 600 4.1.1, 200.7R4.4, ME	ETALS BY ICP (DISSO	LVED)						
Cadmium	NELAP	2.00		< 2.00	μg/L	1	10/18/2012 13:03	82578
Zinc	NELAP	10.0		2810	µg/L	1	10/18/2012 13:03	82578
EPA 600 4.1.4, 200.7R4.4, ME	ETALS BY ICP (TOTAL	_)						
Cadmium	NELAP	2.00		< 2.00	µg/L	1	10/18/2012 16:27	82577
Zinc	NELAP	10.0		3080	μg/L	1	10/18/2012 16:27	82577
STANDARD METHODS 3030	E, 3113 B, METALS E	BY GFAA						
Lead	NELAP	10.0	X	24.7	µg/L	5	10/18/2012 15:50	82570
STANDARD METHODS 3030	B, 3113 B, METALS E	BY GFAA (D	ISSOLVE	D)				
Lead	NELAP	10.0	X	15.6	µg/L	5	10/18/2012 16:03	82567



http://www.teklabinc.com/

Client: Barr Engineering Company

Work Order: 12100835

Client Project: Leadwood MTS-25/86-0013

Report Date: 02-Nov-12

Lab ID: 12100835-003

Client Sample ID: LW-Dup

Matrix: WASTE WATER

Collection Date: 10/16/2012 10:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 600 375.2 REV 2.0 1993	(TOTAL)							
Sulfate	NELAP	10		20	mg/L	1	10/19/2012 13:25	R169547
STANDARD METHOD 4500-	HB, LABORATORY AN	NALYZED						
Lab pH	NELAP	1.00		7.80		1	10/17/2012 14:21	R169403
STANDARD METHODS 2340	C							
Hardness, as (CaCO3)	NELAP	5		220	mg/L	1	10/18/2012 7:50	R169407
STANDARD METHODS 2540	D							
Total Suspended Solids	NELAP	6		< 6	mg/L	1	10/18/2012 9:43	R169470
STANDARD METHODS 5310	C, ORGANIC CARBO	N						
Total Organic Carbon (TOC)	NELAP	1.0		4.6	mg/L	1	10/18/2012 15:56	R169504
EPA 600 4.1.1, 200.7R4.4, ME	ETALS BY ICP (DISSO	LVED)						
Cadmium	NELAP	2.00		< 2.00	μg/L	1	10/18/2012 13:07	82578
Zinc	NELAP	10.0		< 10.0	μg/L	1	10/18/2012 13:07	82578
EPA 600 4.1.4, 200.7R4.4, ME	ETALS BY ICP (TOTAL	)						
Cadmium	NELAP	2.00		< 2.00	μg/L	1	10/18/2012 16:31	82577
Zinc	NELAP	10.0		12.3	μg/L	1	10/18/2012 16:31	82577
STANDARD METHODS 3030	E, 3113 B, METALS E	Y GFAA						
Lead	NELAP	2.00		< 2.00	μg/L	1	10/18/2012 12:23	82570
STANDARD METHODS 3030	B, 3113 B, METALS B	Y GFAA (D	ISSOLVE	D)				
Lead	NELAP	2.00	A STATE OF THE STA	< 2.00	µg/L	1	10/18/2012 14:25	82567



http://www.teklabinc.com/

Client: Barr Engineering Company Work Order: 12100835

Client Project: Leadwood MTS-25/86-0013 Report Date: 02-Nov-12

Lab ID: 12100835-004 Client Sample ID: LW-US

Matrix: WASTE WATER Collection Date: 10/16/2012 8:20

Analyses	Certification	RL Qua	l Result	Units	DF	Date Analyzed	Batch
EPA 600 375.2 REV 2.0 1993	(TOTAL)						
Sulfate	NELAP	10	14	mg/L	1	10/18/2012 3:50	R169463
STANDARD METHOD 4500-H	B, LABORATORY A	NALYZED					
Lab pH	NELAP	1.00	7.74		1	10/17/2012 14:22	R169403
STANDARD METHODS 2340	C						
Hardness, as (CaCO3)	NELAP	5	200	mg/L	1	10/18/2012 7:50	R169407
STANDARD METHODS 2540	D			1000			
Total Suspended Solids	NELAP	6	< 6	mg/L	1	10/18/2012 9:56	R169470
STANDARD METHODS 5310	C, ORGANIC CARBO	N					
Total Organic Carbon (TOC)	NELAP	1.0	4.4	mg/L	1	10/18/2012 16:02	R169504
EPA 600 4.1.1, 200.7R4.4, ME	ETALS BY ICP (DISSO	LVED)					
Cadmium	NELAP	2.00	< 2.00	µg/L	. 1	10/18/2012 13:21	82578
Zinc	NELAP	10.0	< 10.0	μg/L	1	10/18/2012 13:21	82578
EPA 600 4.1.4, 200.7R4.4, ME	ETALS BY ICP (TOTAL	)					
Cadmium	NELAP	2.00	< 2.00	µg/L	1	10/18/2012 16:34	82577
Zinc	NELAP	10.0	< 10.0	µg/L	1	10/18/2012 16:34	82577
STANDARD METHODS 3030	E, 3113 B, METALS I	BY GFAA					
Lead	NELAP	2.00	< 2.00	μg/L	1	10/18/2012 12:26	82570
STANDARD METHODS 3030	B, 3113 B, METALS E	Y GFAA (DISSO	_VED)				
Lead	NELAP	2.00	< 2.00	µg/L	1	10/18/2012 14:28	82567



http://www.teklabinc.com/

Client: Barr Engineering Company

Work Order: 12100835

Client Project: Leadwood MTS-25/86-0013

Report Date: 02-Nov-12

Lab ID: 12100835-005

Client Sample ID: LW-DS

Matrix: WASTE WATER

Collection Date: 10/16/2012 10:35

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 600 375.2 REV 2.0 1993	(TOTAL)							
Sulfate	NELAP	10		17	mg/L	1	10/18/2012 4:00	R169463
STANDARD METHOD 4500-F	HB, LABORATORY AN	NALYZED	10.45				No.	
Lab pH	NELAP	1.00		7.74		1	10/17/2012 14:24	R169403
STANDARD METHODS 2340	С							
Hardness, as (CaCO3)	NELAP	5		200	mg/L	1	10/18/2012 7:50	R169407
STANDARD METHODS 2540	D							
Total Suspended Solids	NELAP	6	N & P SAN SHARES	< 6	mg/L	1	10/18/2012 9:56	R169470
STANDARD METHODS 5310	C, ORGANIC CARBO	N						
Total Organic Carbon (TOC)	NELAP	1.0	TO SHEEM STREET, ST. A. S. C.	4.6	mg/L	1	10/18/2012 16:08	R169504
EPA 600 4.1.1, 200.7R4.4, ME	ETALS BY ICP (DISSO	LVED)						
Cadmium	NELAP	2.00		< 2.00	µg/L	1	10/18/2012 13:25	82578
Zinc	NELAP	10.0		< 10.0	µg/L	1	10/18/2012 13:25	82578
EPA 600 4.1.4, 200.7R4.4, ME	TALS BY ICP (TOTAL	)						
Cadmium	NELAP	2.00		< 2.00	µg/L	1	10/18/2012 16:38	82577
Zinc	NELAP	10.0		10.3	µg/L	1	10/18/2012 16:38	82577
STANDARD METHODS 3030	E, 3113 B, METALS E	BY GFAA				energia.		
Lead	NELAP	2.00		< 2.00	µg/L	1	10/18/2012 12:30	82570
STANDARD METHODS 3030	B, 3113 B, METALS B	Y GFAA (D	ISSOLVE	D)		render.		
Lead	NELAP	2.00	A STATE OF THE STA	< 2.00	µg/L	1	10/18/2012 14:32	82567



# Sample Summary

http://www.teklabinc.com/

Client: Barr Engineering Company

Work Order: 12100835

Client Project: Leadwood MTS-25/86-0013

Lab Sample ID	Client Sample ID	Matrix	Fractions	<b>Collection Date</b>
12100835-001	LW-001	Waste Water	5	10/16/2012 8:45
12100835-002	LW-002	Waste Water	5	10/16/2012 9:55
12100835-003	LW-Dup	Waste Water	5	10/16/2012 10:40
12100835-004	LW-US	Waste Water	5	10/16/2012 8:20
12100835-005	LW-DS	Waste Water	5	10/16/2012 10:35



# **Dates Report**

http://www.teklabinc.com/

Client: Barr Engineering Company

Client Project: Leadwood MTS-25/86-0013

Work Order: 12100835

	Client Sample ID  Test Name		April Company of the State of t	Prep Date/Time	Analysis Date/Time
2100835-001A	LW-001	10/16/2012 8:45	10/17/2012 10:00		
	Standard Methods 2540 F				10/17/2012 13:47
2100835-001B	LW-001	10/16/2012 8:45	10/17/2012 10:00		
	EPA 600 375.2 Rev 2.0 1993 (Total)				10/18/2012 3:26
	Standard Method 4500-H B, Laboratory Analyzed				10/17/2012 14:16
	Standard Methods 2340 C				10/18/2012 7:50
	Standard Methods 2540 D				10/18/2012 9:43
2100835-001C	LW-001	10/16/2012 8:45	10/17/2012 10:00		
	EPA 600 4.1.4, 200.7R4.4, Metals by ICP (Total)			10/17/2012 15:59	10/18/2012 13:54
	Standard Methods 3030 E, 3113 B, Metals by GFAA			10/17/2012 14:50	10/18/2012 11:58
2100835-001D	LW-001	10/16/2012 8:45	10/17/2012 10:00		
	EPA 600 4.1.1, 200.7R4.4, Metals by ICP (Dissolved)			10/17/2012 16:36	10/18/2012 12:52
	Standard Methods 3030 B, 3113 B, Metals by GFAA (I	Dissolved)		10/17/2012 14:09	10/18/2012 14:05
2100835-001E	LW-001	10/16/2012 8:45	10/17/2012 10:00		
	Standard Methods 5310 C, Organic Carbon				10/18/2012 15:43
2100835-002A	LW-002	10/16/2012 9:55	10/17/2012 10:00	。 1. 化聚氯钠铁泵	
	Standard Methods 2540 F				10/17/2012 13:47
2100835-002B	LW-002	10/16/2012 9:55	10/17/2012 10:00		
	EPA 600 375.2 Rev 2.0 1993 (Total)				10/18/2012 3:28
	Standard Method 4500-H B, Laboratory Analyzed				10/17/2012 14:18
	Standard Methods 2340 C				10/18/2012 7:50
	Standard Methods 2540 D				10/18/2012 9:43
2100835-002C	LW-002	10/16/2012 9:55	10/17/2012 10:00		
	EPA 600 4.1.4, 200.7R4.4, Metals by ICP (Total)		Residence of the second	10/17/2012 15:59	10/18/2012 16:27
	Standard Methods 3030 E, 3113 B, Metals by GFAA			10/17/2012 14:50	10/18/2012 15:50
2100835-002D	LW-002	10/16/2012 9:55	10/17/2012 10:00	(1)	
	EPA 600 4.1.1, 200.7R4.4, Metals by ICP (Dissolved)		real section	10/17/2012 16:36	10/18/2012 13:03
	Standard Methods 3030 B, 3113 B, Metals by GFAA (I	Dissolved)		10/17/2012 10:50	10/18/2012 16:03
2100835-002E	LW-002	10/16/2012 9:55	10/17/2012 10:00	14.07	
	Standard Methods 5310 C, Organic Carbon				10/18/2012 15:49
2100835-003A	LW-Dup	10/16/2012 10:40	10/17/2012 10:00		10/10/2012 13.49
		10/10/2012 10,40	70/1//2012 10:00	10.00	10/19/2012 7.50
	Standard Methods 2340 C				10/18/2012 7:50
2100835-003B	Standard Methods 2540 D  LW-Dup	10/16/2012 10:40	10/17/2012 10:00		10/18/2012 9:43
100055-003B		10/10/2012 10:40	10/17/2012 10:00		
	EPA 600 375.2 Rev 2.0 1993 (Total)				10/19/2012 13:25
	Standard Method 4500-H B, Laboratory Analyzed				10/17/2012 14:21



# **Dates Report**

http://www.teklabinc.com/

Client: Barr Engineering Company

Work Order: 12100835

Client Project: Leadwood MTS-25/86-0013

Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
	10/16/2012 10:40	10/17/2012 10:00	A THE RESERVE OF THE PARTY OF T	
			10/17/2012 15:50	10/18/2012 16:31
				10/18/2012 12:23
	10/16/2012 10:40	10/17/2012 10:00	10/17/2012 14:50	
			10/17/2012 16:36	10/18/2012 13:07
	Dissolved)			10/18/2012 14:25
		10/17/2012 10:00	10/17/2012 14:09	3445 (322)
				10/18/2012 15:56
The state of the s	10/16/2012 8:20	10/17/2012 10:00	2000年1月1日 - 1月1日 - 1月1	10/10/2012 13:30
A Committee of the second of t	10/10/2012 0.20	10/17/2012 10:00		10/19/2012 7-50
				10/18/2012 7:50 10/18/2012 9:56
	10/16/2012 9-20	10/17/2012 10:00		10/10/2012 7.30
	10/10/2012 8.20	10/17/2012 10:00		10/19/0012 2 50
				10/18/2012 3:50
Standard Method 4500-H B, Laboratory Analyzed		10/19/00:00:00		10/17/2012 14:22
LW-US	10/16/2012 8:20	10/17/2012 10:00		
EPA 600 4.1.4, 200.7R4.4, Metals by ICP (Total)			10/17/2012 15:59	10/18/2012 16:34
Standard Methods 3030 E, 3113 B, Metals by GFAA			10/17/2012 14:50	10/18/2012 12:26
LW-US	10/16/2012 8:20	10/17/2012 10:00		
EPA 600 4.1.1, 200.7R4.4, Metals by ICP (Dissolved)	STATE OF THE STATE		10/17/2012 16:36	10/18/2012 13:21
Standard Methods 3030 B, 3113 B, Metals by GFAA (I	Dissolved)		10/17/2012 14:09	10/18/2012 14:28
LW-US	10/16/2012 8:20	10/17/2012 10:00		
Standard Methods 5310 C, Organic Carbon	THE STREET STREET AND STREET STREET, STREET	STREET ACCUMENTS AND ASSESSED.		10/18/2012 16:02
LW-DS	10/16/2012 10:35	10/17/2012 10:00		
Standard Methods 2340 C	Colorada di Cara Sara da Cara d			10/18/2012 7:50
Standard Methods 2540 D				10/18/2012 9:56
LW-DS	10/16/2012 10:35	10/17/2012 10:00		
EPA 600 375.2 Rev 2.0 1993 (Total)				10/18/2012 4:00
Standard Method 4500-H B, Laboratory Analyzed				10/17/2012 14:24
LW-DS	10/16/2012 10:35	10/17/2012 10:00		
EPA 600 4.1.4, 200.7R4.4, Metals by ICP (Total)			10/17/2012 15:59	10/18/2012 16:38
Standard Methods 3030 E, 3113 B, Metals by GFAA			10/17/2012 14:50	10/18/2012 12:30
LW-DS	10/16/2012 10:35	10/17/2012 10:00		
			10/17/2012 16:36	10/18/2012 13:25
	Dissolved)		10/17/2012 14:09	10/18/2012 14:32
		10/17/2012 10:00		
Standard Methods 5310 C, Organic Carbon			MARKET BURNEY	10/18/2012 16:08
	Test Name  LW-Dup  EPA 600 4.1.4, 200.7R4.4, Metals by ICP (Total) Standard Methods 3030 E, 3113 B, Metals by GFAA  LW-Dup  EPA 600 4.1.1, 200.7R4.4, Metals by ICP (Dissolved) Standard Methods 3030 B, 3113 B, Metals by GFAA (I  LW-Dup Standard Methods 5310 C, Organic Carbon  LW-US  Standard Methods 2340 C Standard Methods 2540 D  LW-US  EPA 600 375.2 Rev 2.0 1993 (Total) Standard Methods 4500-H B, Laboratory Analyzed  LW-US  EPA 600 4.1.4, 200.7R4.4, Metals by ICP (Total) Standard Methods 3030 E, 3113 B, Metals by GFAA (I  LW-US  Standard Methods 3030 B, 3113 B, Metals by GFAA (I  LW-US  Standard Methods 3030 B, 3113 B, Metals by GFAA (I  LW-US  Standard Methods 2340 C Standard Methods 2540 D  LW-DS  Standard Methods 2540 D  LW-DS  EPA 600 375.2 Rev 2.0 1993 (Total) Standard Methods 2540 D  LW-DS  EPA 600 4.1.4, 200.7R4.4, Metals by ICP (Total) Standard Methods 3030 E, 3113 B, Metals by GFAA  LW-DS  EPA 600 4.1.4, 200.7R4.4, Metals by ICP (Total) Standard Methods 3030 E, 3113 B, Metals by GFAA  LW-DS  EPA 600 4.1.4, 200.7R4.4, Metals by ICP (Total) Standard Methods 3030 E, 3113 B, Metals by GFAA  LW-DS  EPA 600 4.1.4, 200.7R4.4, Metals by ICP (Total) Standard Methods 3030 E, 3113 B, Metals by GFAA  LW-DS  EPA 600 4.1.1, 200.7R4.4, Metals by ICP (Total)	Test Name  LW:Dup 10/16/2012 10:40  EPA 600 4.1.4, 200.7R4.4, Metals by ICP (Total) Standard Methods 3030 E, 3113 B, Metals by GFAA  LW-Dup 10/16/2012 10:40  EPA 600 4.1.1, 200.7R4.4, Metals by ICP (Dissolved) Standard Methods 3030 B, 3113 B, Metals by GFAA (Dissolved)  LW-Dup 10/16/2012 10:40  Standard Methods 5310 C, Organic Carbon  LW-US 10/16/2012 8:20  Standard Methods 2340 C Standard Methods 2540 D  LW-US 10/16/2012 8:20  EPA 600 375.2 Rev 2.0 1993 (Total) Standard Methods 3030 E, 3113 B, Metals by GFAA  LW-US 10/16/2012 8:20  EPA 600 4.1.4, 200.7R4.4, Metals by ICP (Total) Standard Methods 3030 B, 3113 B, Metals by GFAA (Dissolved)  LW-US 10/16/2012 8:20  EPA 600 4.1.1, 200.7R4.4, Metals by ICP (Dissolved) Standard Methods 3030 B, 3113 B, Metals by GFAA (Dissolved)  LW-US 10/16/2012 8:20  EPA 600 4.1.1, 200.7R4.4, Metals by ICP (Dissolved) Standard Methods 5310 C, Organic Carbon  LW-DS 10/16/2012 10:35  Standard Methods 2340 C Standard Methods 2540 D  LW-DS 10/16/2012 10:35  EPA 600 4.1.4, 200.7R4.4, Metals by ICP (Total) Standard Methods 2540 D  LW-DS 10/16/2012 10:35  EPA 600 4.1.4, 200.7R4.4, Metals by ICP (Total) Standard Method 4500-H B, Laboratory Analyzed  LW-DS 10/16/2012 10:35  EPA 600 4.1.4, 200.7R4.4, Metals by ICP (Total) Standard Methods 3030 E, 3113 B, Metals by GFAA  LW-DS 10/16/2012 10:35  EPA 600 4.1.1, 200.7R4.4, Metals by ICP (Total) Standard Methods 3030 B, 3113 B, Metals by GFAA  LW-DS 10/16/2012 10:35	Test Name  LW-Dup    10/16/2012 10:40   10/17/2012 10:00     EPA 600 4.1.4, 200.7R4.4, Metals by ICP (Total)     Standard Methods 3030 E, 3113 B, Metals by GFAA     LW-Dup	Test Name         Prep Date/Time           E.W. Dup         10/16/2012 10-40         10/17/2012 10-30           EPA 600 4.1.4, 200.7R4.4, Metals by ICP (Total)         10/16/2012 10-30         10/17/2012 10-30           Standard Methods 3030 E, 3113 B, Metals by GFAA         10/17/2012 10-30         10/17/2012 10-30           EFA 600 4.1.1, 200.7R4.4, Metals by ICP (Dissolved)         10/17/2012 10-30         10/17/2012 10-30           Standard Methods 3030 B, 3113 B, Metals by GFAA (Dissolved)         10/17/2012 10-30         10/17/2012 10-30           LW-Up         10/16/2012 8:20         10/17/2012 10-30         10/17/2012 10-30           Standard Methods 5310 C, Organic Carbon         10/16/2012 8:20         10/17/2012 10-30         10/17/2012 10-30           LW-US         10/16/2012 8:20         10/17/2012 10-30         10/17/2012 10-30           EPA 600 375.2 Rev 2.0 1993 (Total)         10/16/2012 8:20         10/17/2012 10-30         10/17/2012 10-30           EPA 600 4.1.4, 200.7R4.4, Metals by ICP (Total)         10/16/2012 8:20         10/17/2012 10-30         10/17/2012 10-30           EPA 600 4.1.1, 200.7R4.4, Metals by ICP (Dissolved)         10/16/2012 8:20         10/17/2012 10-30         10/17/2012 10-30           LW-US         10/16/2012 8:20         10/17/2012 10-30         10/17/2012 10-30         10/17/2012 10-30           Standard Methods 3030



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EPA 600 375.2 RE	V 2.0 1993 (	TOTAL	)									
Batch R169463 SampID: MBLK	SampType:			Units mg/L								Date
Analyses			RL	Qual		Result	Spike	SPK Ref Va	%REC	Low Limit	High Limit	Analyzed
Sulfate			10			< 10	•	And Andrews	ou today du action de		The state of the s	10/17/2012
Batch R169463 SampID: LCS	SampType:	LCS		Units mg/L	113						h la jaj	Date
Analyses	1000 E		RL	Qual		Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Sulfate	£.		10			22	20	0	109.2	90	110	10/17/2012
Batch R169463 SampID: 12100835-	SampType: 004BMS	MS		Units mg/L		1 =		200 - 100 200 -		100	3 8	Date
Analyses			RL	Qual		Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Sulfate			10			23	10	13.65	94.5	90	110	10/18/2012
<b>Batch R169463</b> SampID: 12100835-	SampType: 004BMSD	MSD	-	Units mg/L	15		-	As the		RPI	D Limit 10	Date
Analyses			RL	Qual		Result	Spike	SPK Ref Val	%REC	RPD Ref	Val %RPD	Analyzed
Sulfate			10			23	10	13.65	94.2	23.10	0.13	10/18/2012
Batch R169508 BampID: MBLK	SampType:	MBLK		Units mg/L								Date
Analyses			RL	Qual		Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Sulfate			10			< 10						10/18/2012
Batch R169508	SampType:	LCS		Units mg/L		enter our s						Date
Analyses	lgl-ja		RL	Qual		Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Sulfate			10			21	20	0	103.0	90	110	10/18/2012
Batch R169547 GampID: MBLK	SampType:	MBLK		Units mg/L			w A					Date
Analyses			RL	Qual		Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Sulfate			10			< 10					76 M 10 M 10 M 10 M	10/19/2012
Satch R169547 campID: LCS	SampType:	LCS		Units mg/L			aty Time					Date
Analyses			RL	Qual		Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Sulfate			10	Anterior Is a series	- 0.00	20	20	0	102.1	90	110	10/19/2012



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Report Date: 02-Nov-12

Client: Barr Engineering Company

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STANDARD METHOD 4500-H	B, LAB	ORATO	RY ANALYZ	ED		V)					
Batch R169403 SampType: SampID: LCS	LCS		Units								Date
Analyses	- 54	RL	Qual	1	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Lab pH		1.00			6.98	7.00	0	99.7	99.1	100.8	10/17/2012
Batch R169403 SampType: SampID: 12100835-001BDUP	DUP	777	Units						RPD	Limit 10	Date
Analyses		RL	Qual		Result	Spike	SPK Ref Val	%REC	RPD Ref V	/al %RPD	Analyzed
Lab pH		1.00			8.00				7.990	0.13	10/17/2012
Batch R169403 SampType: SampID: 12100835-002BDUP	DUP	our benjamen	Units						RPD	Limit 10	Date
Analyses		RL	Oual		Result	Spike	SPK Ref Val	%REC	RPD Ref V	/al %RPD	Analyzed
Lab pH		1.00		1 1	7.92				7.920	0.00	10/17/2012
Batch R169403 SampType: SampID: 12100835-003BDUP	DUP		Units	1					RPD	Limit 10	Date
Analyses		RL	Qual		Result	Snike	SPK Ref Val	%REC	RPD Ref \	/al %RPD	Analyzed
Lab pH		1.00	Quui	38.6	7.78	Орис	The second secon		7.800	0.26	10/17/2012
Batch R169403 SampType:	DUP		Units	71 A	- and and				RPD	Limit 10	
SampID: 12100835-004BDUP		DI	01		Dogult	Chileo	SPK Ref Val	%RFC	RPD Ref \	/al %RPD	Date Analyzed
Analyses Lab pH		1.00	Qual		7.75	Spike	0,000		7.740	0.13	10/17/2012
Batch R169403 SampType: SampID: 12100835-005BDUP	DUP		Units						RPD	Limit 10	Date
Analyses		RL	Qual		Result	Spike	SPK Ref Val	%REC	RPD Ref \	/al %RPD	Analyzed
Lab pH		1.00		1100000	7.74				7.740	0.00	10/17/2012
STANDARD METHODS 2340 C											9.9
SampID: MB-R169407 SampType:	7		Units mg/L								Date Analyzed
Analyses	1.42	RL	Qual	12		Spike	SPK Ref Val	%REC	Low Limit	High Limit	<b>科斯二里斯斯斯斯</b>
Hardness, as ( CaCO3 )		5			< 5						10/17/2012
Batch R169407 SampType: BampID: LCS-R169407	LCS	The second	Units mg/L							TW Tarrens La	Date Analyzed
Analyses		RL	Qual	5.5	Result	Spike	SPK Ref Val	THE STATE OF STREET	2011年1月1日 日本 1011年1日 1日 1	High Limit	Analyzed
Hardness, as ( CaCO3 )		5			980	1000	0	98.0	90	110	10/17/2012



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STANDARD METHODS 2340 C				i-1	yn i					
Batch R169407 SampType: MS SampID: 12100835-005AMS		Units mg/L								Date
Analyses	RL	Qual		Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Hardness, as ( CaCO3 )	5			600	400	200.0	100.0	85	115	10/18/2012
Batch R169407 SampType: MSD		Units mg/L			principal in	, i		RPE	Limit 10	
SampID: 12100835-005AMSD		Last		Lot Se	- 45-a.	ODK D-41/-1	0/050	DDD D (1	4.1. WDDD	Date Analyzed
Analyses Hardness, as ( CaCO3 )	RL 5	Qual	TRE	Result	Spike 400	SPK Ref Val	105.0	600.0	Val %RPD 3.28	10/18/2012
Lie de Care								000.0	0.20	10/10/2012
STANDARD METHODS 2540 D										
Batch R169470 SampType: MBL SampID: MBLK	K	Units mg/L								Date
Analyses	RL	Qual		Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Total Suspended Solids	6			< 6					- 10017 - 100 Ha Hu 11 11 11 17 2	10/18/2012
Batch R169470 SampType: LCS	* 10	Units mg/L		. 1	nige kir en					L all
SampID: LCS						ODK D CV	WEEG			Date Analyzed
Analyses	RL	Qual			Spike	The same of the same of the same of		Low Limit	STANSAR STREET, ALS	
Total Suspended Solids	6			90	100	0	90.0	85	115	10/18/2012
Total Suspended Solids	6			104	100	0	104.0	85	115	10/18/2012
Total Suspended Solids Total Suspended Solids	6			101 93	100 100	0	101.0 93.0	85 85	115 115	10/18/2012 10/18/2012
Batch R169470 SampType: DUP	7 - 195	Lipito mar/l	3910	- M - M-771 C	r = 10ja		***	DDD	Limit 45	
Batch R169470 SampType: DUP SampID: 12100835-003A DUP		Units mg/L						KFL	Limit 15	Date
Analyses	RL	Qual		Result	Spike	SPK Ref Val	%REC	RPD Ref \	/al %RPD	Analyzed
Total Suspended Solids	6			< 6				0	0.00	10/18/2012
STANDARD METHODS 5310 C, ORG	SANIC CA	ARBON								
Batch R169504 SampType: MBLI SampID: MBLK	CONTRACTOR OF THE PARTY OF THE	Units mg/L								Date
Analyses	RL	Qual		Result	Snike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Total Organic Carbon (TOC)	1.0		All mining	< 1.0	Dpine	CHAPAR AND DAY	3 3 3 4	- 10 1 - 19 - 19-73 2-31 HM 信託権の信託		10/18/2012
	2 7 10 11	Units mg/L					- X			
Batch R169504 SampType: LCS										Date
SampID: LCS							r Harlandler			
SampID: LCS Analyses	RL	Qual				SPK Ref Val		Low Limit	High Limit	Analyzed
SampID: LCS	RL 10.0	Qual		Result 59.9		SPK Ref Val	%REC 100.4	Low Limit	High Limit	
SampID: LCS Analyses		Qual Units mg/L						1.0. 1. 1.11 (0.13) 4 (0.04) (0.04)	A DIMERSE DE LIBERTA DE MANTE CONTROL DE	Analyzed
SampID: LCS  Analyses  Total Organic Carbon (TOC)  3atch R169504 SampType: MS					59.7		100.4	1.0. 1. 1.11 (0.13) 4 (0.04) (0.04)	A DIMERSE DE LIBERTA DE MANTE CONTROL DE	Analyzed 10/18/2012



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STANDARD METH	000000	,	11110 07	IIIDOIN	SUBSE		Chicagon C. V.	<b>经验与</b> 加约。但是阿姆斯的	ELDESTERNISTES ESTERNIS	DEALER OF THE PARTY OF THE PART	USE SHEDRINGH ANNUARISHMEN	所是10.345(SSSS) MINISTER STEELS
Batch R169504 SampID: 12100835-	SampType: 005EMSD	MSD		Units mg/L	THE RESERVE					RPD	Limit 10	Date
Analyses			RL	Qual		Result	Spike	SPK Ref Val	%REC	RPD Ref	/al %RPD	Analyzed
Total Organic Carb	oon (TOC)		1.0			9.5	5.0	4.560	98.6	9.440	0.53	10/18/2012
EPA 600 4.1.1, 200			Y ICP (D	ISSOLVED)								
Batch 82578 SampID: MB-82578	SampType:	MBLK		Units µg/L								Date
Analyses			RL	Qual		Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Cadmium			2.00			< 2.00	2.00	0	0	-100	100	10/18/2012
Zinc			10.0			< 10.0	10.0	0	0	-100	100	10/18/2012
Batch 82578 SampID: LCS-82578	SampType:	LCS		Units µg/L					Thomas of S			Date
Analyses			RL	Qual		Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Cadmium			2.00			46.8	50.0	0	93.6	85	115	10/18/2012
Zinc			10.0			499	500	0	99.9	85	115	10/18/2012
Batch 82578 SampID: 12100835-	SampType: 001DMS	MS		Units µg/L								Date
Analyses			RL	Qual		Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Cadmium			2.00	Troyle		48.4	50.0	2.6	91.6	75	125	10/18/2012
Zinc			10.0			1520	500	1059	91.2	75	125	10/18/2012
Batch 82578 SampID: 12100835-	SampType: 001DMSD	MSD		Units µg/L						RPD	Limit 20	Date
Analyses			RL	Qual		Result	Snike	SPK Ref Val	%REC	RPD Ref	/al %RPD	Analyzed
Cadmium			2.00	Quui		48.6	50.0	2.6	92.0	48.4	0.41	10/18/2012
Zinc			10.0			1520	500	1059	91.4	1515	0.07	10/18/2012
EPA 600 4.1.4, 200	.7R4.4, MET	ALS B	Y ICP (T	OTAL)								
3atch 82577 SampID: MB-82577	SampType:	MBLK	The speaking	Units µg/L								Date
Analyses			RL	Qual	J.W.	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Cadmium			2.00			< 2.00	2.00	0	0	-100	100	10/18/2012
Zinc			10.0			< 10.0	10.0	0	0	-100	100	10/18/2012
<b>3atch 82577</b> SampID: LCS-82577	SampType:	LCS		Units µg/L								Date Analyzed
Analyses			RL	Qual		Result	The state of the s	SPK Ref Val	TOP CHEEK MATERIAL	Low Limit	High Limit	THE CHILD PLAN
Cadmium			2.00			50.9	50.0	0	101.8	85	115	10/18/2012
Zinc			10.0			538	500	0	107.6	85	115	10/18/2012



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EPA 600 4.1.4, 200.7R4.4, ME	To pe (III)	1 101 (1		19725		<b>中国自己的</b>	ME AND PRESIDENCE HIS MAD	ACHTER THE THREE THE	Seize avecadore administratorios	PORTUGACION DESCRIPTO PARLAMENTARIO	
Batch 82577 SampType:	MS		Units µg/L								
SampID: 12100835-001CMS											Date Analyzed
Analyses		RL	Qual	100	Result	and the second		10.25	7777	High Limit	1000000
Cadmium		2.00			52.6	50.0	2.9	99.4	75	125	10/18/2012
Zinc		10.0			1640	500	1133	102.0	75	125	10/18/2012
Batch 82577 SampType: SampID: 12100835-001CMSD	MSD		Units µg/L						RPD	Limit 20	Date
Analyses		RL	Qual		Result	Spike	SPK Ref Val	%REC	RPD Ref	Val %RPD	Analyzed
Cadmium		2.00			52.3	50.0	2.9	98.8	52.6	0.57	10/18/2012
Zinc		10.0			1660	500	1133	106.2	1643	1.27	10/18/2012
STANDARD METHODS 3030	E, 3113	B, MET	ALS BY GF	AA							
Batch 82570 SampType: SampID: MB-82570	MBLK		Units µg/L					- 11,		,	Date
Analyses		RL	Oual		Result	Snike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Lead		2.00	4		< 2.00	2.00	0	0	-100	100	10/18/2012
Batch 82570 SampType: SampID: LCS-82570	LCS	72 107	Units µg/L				10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				Date
Analyses		RL	Qual		Result	Snike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Lead		2.00	Q didi	78-4550	13.4	15.0	0	89.0	85	115	10/18/2012
Batch 82570 SampType: SampID: 12100835-002CMS	MS		Units µg/L								Date
Analyses		RL	Qual		Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Lead		10.0			38.4	15.0	24.705	91.0	70	130	10/18/2012
Batch 82570 SampType: SampID: 12100835-002CMSD	MSD	10 V21 X	Units µg/L						RPD	Limit 20	Date
Analyses		RL	Qual		Result	Spike	SPK Ref Val	%REC	RPD Ref \	/al %RPD	Analyzed
Lead		10.0		era, mark		15.0	24.705	91.0	38.3595	0.00	10/18/2012
STANDARD METHODS 3030 E	3, 3113	B, META	ALS BY GFA	(I	DISSOL	VED)					
Batch 82567 SampType: SampID: MB-82567	TATISTICS.	KACH DESCRIPTION	Units µg/L								Date
Analyses		RL	Qual		Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Lead		2.00			< 2.00	2.00	0	0	-100	100	10/18/2012
Batch 82567 SampType: SampID: LCS-82567	LCS		Units µg/L								Date
Analyses		RL	Qual		Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Lead		2.00		2.7 (00%)	13.9		0	92.9	85	115	10/18/2012



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STANDARD METHODS 3030 B, 3113           Batch         82567         SampType: MS           SampID:         12100835-002DMS		Units µg/L							Date
Analyses	RL	Qual	Rest	lt Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Lead	10.0		30.	3 15.0	15.5875	98.3	70	130	10/18/2012
Batch 82567 SampType: MSD	1	Units µg/L					RPE	Limit 20	
SampID: 12100835-002DMSD									Date
Analyses	RL	Qual	Resi	lt Spike	SPK Ref Val	%REC	RPD Ref	Val %RPD	Analyzed
Lead	10.0		29.	6 15.0	15.5875	93.5	30.3295	2.41	10/18/2012



Client: Barr Engineering Company

#### **Receiving Check List**

http://www.teklabinc.com/

Work Order: 12100835

**V** 

Client Project: Leadwood MTS-25/86-0013 Report Date: 02-Nov-12 Carrier: Rick Schmidt Received By: TWM Completed by: Reviewed by: On: On: 17-Oct-12 17-Oct-12 Timothy W. Mathis Michael L. Austin Pages to follow: Chain of custody Extra pages included No 🗌 Shipping container/cooler in good condition? Yes Not Present Temp °C Type of thermal preservation? Ice 🗸 Blue Ice None Dry Ice Chain of custody present? ~ No 🗌 Yes ~ Chain of custody signed when relinquished and received? No \_\_ Chain of custody agrees with sample labels? Yes No No 🗌 Samples in proper container/bottle? Yes ~ Sample containers intact? Yes No Sufficient sample volume for indicated test? **V** Yes No 🗌

Yes

Field

Yes

Yes

Yes

Any No responses must be detailed below or on the COC.

No 🗌

No

No

No 🗌

No 🗌

No VOA vials

No TOX containers

NA

Lab

Custody seal(s) intact on shipping container/cooler.

Water - TOX containers have zero headspace?

All samples received within holding time?

Container/Temp Blank temperature in compliance?

Water - at least one vial per sample has zero headspace?

NPDES/CWA TCN interferences checked/treated in the field?

When thermal preservation is required, samples are compliant with a temperature between

0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Reported field parameters measured:

Water - pH acceptable upon receipt?

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### **Teklab Chain of Custody**

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5445 Horseshoe Lake Road ~ Collinsville, IL 62234 ~ Phone: (618)344-1004 ~ Fax:(618)344-1005 Are the samples chilled? Yes No with: Ice Blue ice Preserved in Lab (OField Barr Engineering Co. Cooler Temp (.4 Sampler SBM) 1001 Diamond Ridge, Suite 1100 Jefferson City MO 65109 Invoice to Mark Nations. Results to Allison Olds and Mark Nations, mnations@doerun.com. Comments Matrix is surface water. Leadwood MTS - 25/86-0013 Metals: Cd, Pb, Zn custody seal infact upon pick up Contact Allison Olds eMail aolds@barr.com Phone 573-638-5007 Requested Due Date Standard Billing/PO Per contract with Doe Run Solids & Dissolved Metals Total Metals Settleable T.O.C. Lab Use Sample ID Sample Date/Time Preservative Matrix Hd 1200835 LW-001 10-16-12 08:45 X X X X X X Unpres Aqueous X X 100-LW-002 -002 10-16-D 09:55 X X X X X Unpres Aqueous X X -003 LW-Dup 10-16-12 10.40 X X X Unpres X X X Aqueous -004 LW-US 10-16-12 08:30 Unpres X X X X Aqueous X X -005 LW-DS 10-16-12 10:35 Unpres X X X Aqueous X X Unpres Aqueous Unpres Aqueous Unpres Aqueous

Relinquished By *	Date/Time	Received By	Date/Time
Store Moilgran	10-16-12 16:00	R. Schmidt	10/17/10 8:38
R.Schmidt	10/17/12 10:20	Tal	10-17-12 /000
p individual signing this agreement on behalf of alice to			

The individual signing this agreement on behalf of client acknowledges that they have read and understand the terms of this agreement and that they have the authority to sign on behalf of client.